| **Subject code: GE-459-2** | **Subject name:** Geospatial databases and digital environment mapping | | |
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| **Study cycle:** I | **Year: IV** | **Semester: VII** | **ECTS credits:** 6 |
| **Status:** Elective | | **Contact hours:** 60<br>Lectures: 30<br>Practical courses: 30 | |
| **Assigned professors and assistants:** | Lecturers and assistants selected for the field to which the course belongs | | |
| **Prerequisits:** | / | | |
| **Subject objectives:** | Acquisition of knowledge necessary for the analysis of spatial complexes and the creation and management of environmental databases, the design of spatial data models and the performance of quality control of spatial databases. Mastering the knowledge of the use of cartographic expressive means, methods and techniques for mapping component and complex elements and processes of the environment. The use of digital technologies in environmental mapping and the creation of spatial data models. | | |
| **Teaching units:** | 1. Introductory considerations - defining geospatial databases and digital environmental mapping<br>2. Database creation, environmental database management systems<br>3. Spatial database model design - raster and vector databases, model implementation and implementation of applications for geospatial data<br>4. Environmental database quality control procedures<br>5. Database management, environmental geospatial database infrastructure<br>6. Environmental metadata<br>7. Development of web technologies for the distribution of spatial environmental databases<br>8. Partial exam<br>9. Environmental mapping;<br>10. Digital mapping - cartographic models, visualization of environmental content;<br>11. Thematic environmental maps, classification of thematic maps - environmental component elements;<br>12. Cartographic expressive means of environmental mapping;<br>13. Methods of digital environmental mapping; | | |

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<tr><td></td><td>14. Software packages for digital environmental mapping;<br>15. Modeling of environmental spatial data.</td></tr>
<tr><td>Learning outcomes:</td><td>Knowledge:<br>• analyzes spatial complexes and creates databases environment;<br>• recognizes the spatial components of the environment and performs their thematic mapping;<br>Skills:<br>• applies cartographic expressive means and methods of environmental mapping;<br>• applies geospatial databases of data from relevant institutions and institutes on spatial complexes of the environment.<br>Competencies:<br>• independently, manages and uses geospatial databases environment;<br>• independently performs digital mapping of the environment;<br>• independently creates digital models of the environment</td></tr>
<tr><td>Teaching methods:</td><td>Multimedia presentation and discussion (lecture); independent student research and joint analysis (practical courses).</td></tr>
<tr><td>Knowledge testing methods with grading structure[1]:</td><td>
<table>
<tr><td></td><td>Maximum Points</td><td>Minimum points</td></tr>
<tr><td>Attendance</td><td>5</td><td>3</td></tr>
<tr><td>Participation on lectures</td><td>5</td><td>3</td></tr>
<tr><td>Test</td><td>40</td><td>22</td></tr>
<tr><td>Seminar paper</td><td>10</td><td>5</td></tr>
<tr><td>Final exam</td><td>40</td><td>22</td></tr>
<tr><td>TOTAL</td><td>100</td><td>55</td></tr>
</table>
Assessment:
<table>
<tr><td>Grade</td><td>ECTS grade</td><td>Points scale</td></tr>
<tr><td>10</td><td>(A) excellent</td><td>95 - 100</td></tr>
<tr><td>9</td><td>(B) very good</td><td>85 - 94</td></tr>
<tr><td>8</td><td>(C) good</td><td>75 - 84</td></tr>
<tr><td>7</td><td>(D) satisfactory</td><td>66 - 74</td></tr>
<tr><td>6</td><td>(E) sufficient</td><td>55 - 64</td></tr>
<tr><td>5</td><td>(F, FX) insufficient</td><td></td></tr>
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[1] The structure of points and point criteria for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught in accordance with Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

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|---|---|
| | 55 |
| **Literature[2]:** | **Mandatory:**<br>1. Hadner, M., Drozg V., (2016): Osnove tematske kartografije, Univerza v Mariboru, Maribor<br>2. Kilibarda, M., Protić, D., 2018: Geovizualizacija i Web kartografija, Građevinski fakultet u Beogradu, Beograd.<br>3. Lješević, M., Bakrač, S. T. (2013). Kartografija za geografe, Univerzitet Crne Gore,Filozofskog fakulteta Nikšić,"Ofset pres"Kraljevo, Nikšić.<br>4. Frančula, N. (2004). Digitalna kartografija, Sveučilište u Zagrebu, Geodetski fakultet,Zagreb<br>5. Verissimo, L., 2009: GIS Data Base for the Environment Protection and Sustainable Management of the Okavango River Basin Project EPSMO<br>**Additional:**<br>1. Lazarević B., Marjanović Z., Aničić N., Babarogić S. (2003): Baze podataka, Univerzitet u Beogradu, Fakultet organizacionih nauka, Beograd. |

[2] The Senate of the higher education institution as an institution or a council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature on the basis of which exams are prepared by a special act which is required to be published on its website before the beginning of the academic year in accordance with Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton.